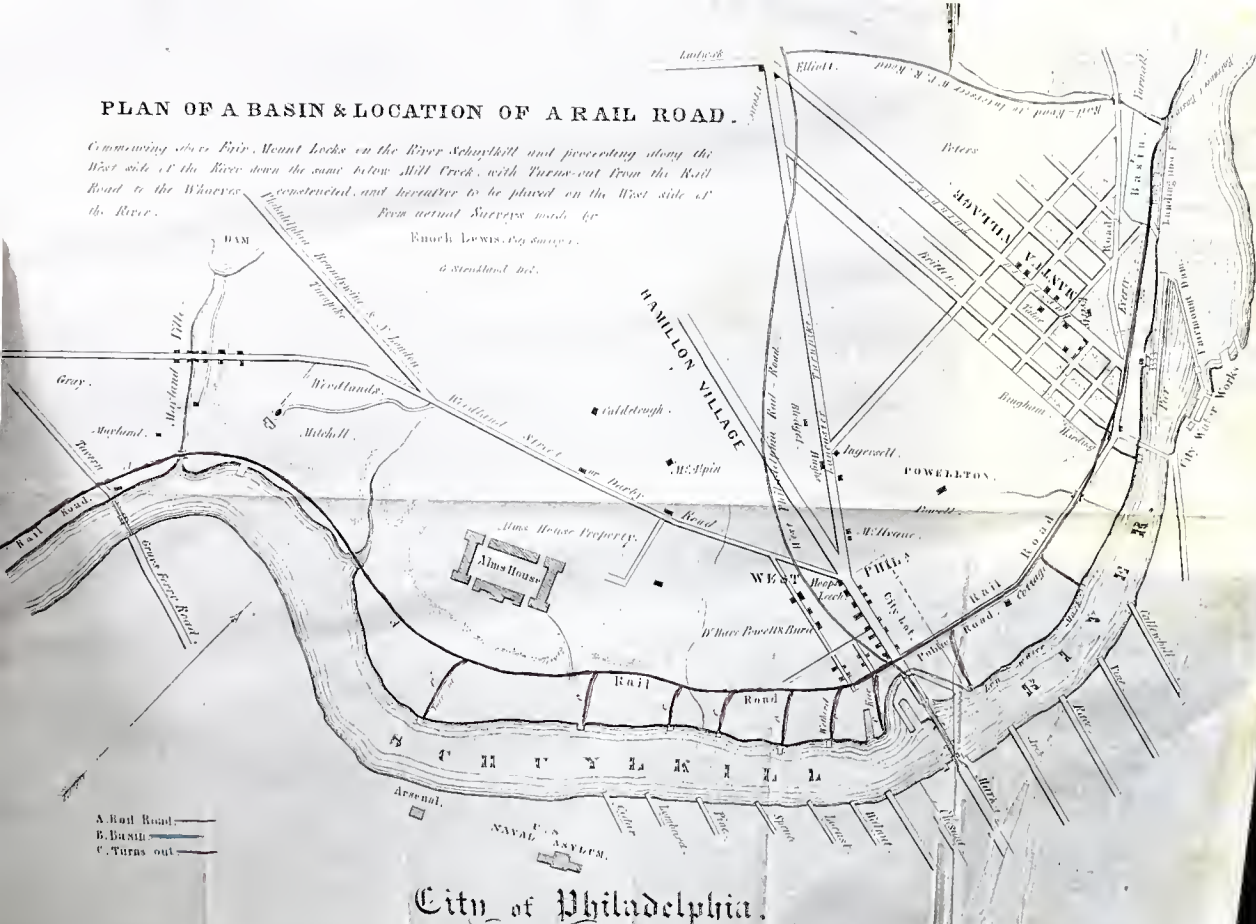


PLAN OF A BASIN & LOCATION OF A RAIL ROAD.

Commencing above Fair Mount Locks on the River Schuylkill and proceeding along the West side of the River down the same below Mill Creek, with Turns-out from the Rail Road to the Wharves constructed, and hereafter to be placed on the West side of the River.

From actual Surveys made by
Enoch Lewis, by Survey.

a Standard Act.



City of Philadelphia.

1837

PLAN OF

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THE WESTERN SCHUYLKILL BASIN, AND RAILROAD.

THE importance and necessity of some means, by which a portion of the large and increasing Coal trade of the Schuylkill shall be conveyed below the dam at Fairmount, other than by passing through the locks of the Navigation Company, have been fully established by the inquiries in reference to a proposed Western Canal, instituted by the joint committee of the Councils of the city of Philadelphia, in December 1834. It is fully maintained by the testimony adduced before that committee, that the coal trade now requires for its export and deposit, additional facilities, near, and on the tide water of the Schuylkill; and that, in a very short period, these will be demanded in a voice which must be heard. Such a communication will secure great advantages both of expedition and economy; and much of the water of the river, now used for lockage at Fairmount; nearly one half; will be saved by it, for the uses of the city water-works.

The evidence referred to, was collected by the zeal and industry of Thomas Mitchell, Esq., the projector of "the Western Canal;" and has been published by him in a pamphlet form, with "The proceedings of the select committee of the Select and Common Councils of the city of Philadelphia, appointed to report upon the subject of the Western Canal."

The proposition for a "Western Canal," by which some of those facilities and benefits would be obtained, has been received by sustaining and opposing opinions. A majority of a select committee of the Councils of Philadelphia, reported that, "after hearing, for three evenings, testimony from gentlemen introduced by the friends of the proposed canal, they came to the conclusion, founded as well upon the testimony adduced, as from a knowledge of the yet unimproved

capabilities of the western front of the city to accommodate additional trade, and upon an appreciation of the expenditures, public and private, already made for future operations, as also upon the claims which the water-works have upon the jealous regard of these councils; that it is the duty of the councils, not to change the course which they have pursued with reference to the proposed canal."

A minority of the committee reported in favour of the proposition of a canal; and expressed a decided opinion that "the work was one calculated to promote the interests of the trade of Philadelphia; and thereby to advance the prosperity of the city."

The report of the majority, part of which has been quoted, does not deny the importance and usefulness of the proposed improvement; but, on the contrary, it fully, although impliedly, admits it. It refuses the assent of the committee to the project; because, by its usefulness and its advantages, it might affect the interests of the public (the city stores and wharves), and of individuals on the western front of the city.

With all respect for the purity of the motives of the majority of the committee, it may be claimed that those views, which are limited to the consideration of the particular interests of a few property holders, and the city stores and wharves, and do not look beyond them to great and general public benefits, do not comport with the liberal spirit of the times.

It is admitted, that the suggestion of an injurious effect on the supply of Schuylkill water, by an extra consumption of the water in Fairmount dam, is entitled to grave consideration; without, however, assenting to, or denying the correctness of the proposition.

The high character of those gentlemen who composed the majority of the select committee, was a sufficient pledge that they would not refuse to give the proper weight to the evidence exhibited, establishing the value and utility of some addition to the facilities for the coal trade: and, at the same time, considering themselves the trustees of the city interests, and of the city property, and the guardians of the property of private persons on the western front of the city; they, in their views of the duties imposed upon them by these relations, have deemed it proper and obligatory on them to oppose a canal.

The report of the minority of the committee, showing the great advantages of the plan, is entitled to much regard and observance.

“The evidence submitted to the committee, establishes the fact that the coal trade, which now constitutes somewhat more than half the business done on the Schuylkill, is subjected to very serious obstructions; such as are avoided by companies that ship their coal from depots situated elsewhere than in the city of Philadelphia. The transfer of coal from canal boats to the wharf, by the Lehigh Coal Company at Bristol, and by the Delaware and Hudson Company at Rondout, is effected with great ease; boats unload in a canal or basin at all hours, with every advantage of low wharves, and security against accidents.

“On the Schuylkill, the case is otherwise; they are brought down into tide water, and hauled alongside of elevated wharves constructed for the high tides of that river. This circumstance limits the unloading to a few hours, probably not more than three in each tide; and owners desirous of unloading two boats in twenty-four hours, at the same place, can effect this object only by having the work done at night, with all the objections to which night work is liable. From this cause boats are often delayed from one to five days; the crews disperse, and the operation of unloading, which elsewhere is done by the boat's crew, is here entrusted to a separate class of workmen, who charge a high price for their labour. Their charge, usually amounting to three dollars per boat (averaging forty-five tons), or about $6\frac{2}{3}$ cents per ton, would be readily saved could the crew of the boat unload immediately on their arrival, as they do elsewhere. The arrangement of our wharves on the Schuylkill is unfavourable to the screening and handling of coal, prior to shipment. It is easy to conceive that a more favourable disposition could be obtained by means of a canal elevated six feet above tide water, as proposed by the petitioners; the effect of which would be to facilitate the screening of coal on permanent screens, and to avoid at least one, and in some cases two, handlings of the coal, and all the waste by breakage incident upon the same. Each handling of coal may be estimated at from eight to ten cents, and the waste at about ten cents per ton.

“The freight from Pottsville to Philadelphia, last year, averaged about one dollar per ton. Assuming twelve days as the duration of a trip, and the average detention on the Schuylkill, below Fairmount dam, to be about two days (which estimates accord with the evidence of competent and respectable witnesses), it follows that on a load of forty-five tons of coal, during the last year, the boat's crew earned at the rate of three dollars seventy-five cents per day; and

that an improvement calculated to reduce the length of the trip by two days, would have effected a reduction of freights of about seven dollars fifty cents per boat load, or about seventeen cents per ton. If the trip were performed in ten days, as stated in evidence, the daily earnings would be four dollars and fifty cents, and the saving twenty cents per ton. At present, the boats lie in the river and are exposed to considerable injury, and some risk, from the fluctuations of tide, and from the heavy swells on the Schuylkill during stormy weather. Abundant proof exists that boats have been sunk between Fairmount dam and the city wharves; and, in some cases, even those that were fastened to wharves have been endangered by occasional high tides, and south-westerly storms, or by heavy floods in the river.

“From all these facts, the committee conclude that the reduction of charges on the coal trade, which would result from the execution of such a canal, would be equivalent, as has been stated in evidence, to from forty to fifty cents per ton, while the facilities which it would give for the expansion of the trade, would be very greatly enhanced.”

It is not asked that those who opposed the canal, under the influence of apprehensions that it would affect the supply of the city with Schuylkill water, the only just or permanent ground of objection to it stated in the report, shall give up their opposition to it: and it is confidently claimed, that if the same facilities and benefits as those properly expected from this canal, can be fully obtained by another mode of communication between Fairmount dam and tide water, to pass along the west side of the Schuylkill; they will give it their full approbation and support.

It is submitted that this may be entirely accomplished *by constructing a large Basin immediately above the Fairmount works, and by a Railroad from the basin to proceed down the west side of the river, on a level of eight or ten feet above the water of the Schuylkill.* This will be a complete and effectual substitute for the proposed canal, and it is exempt from every serious objection to that improvement. The basin will waste none of the water of the river. The water will be admitted into it by an opening at the upper part of it; and it will be returned by another opening, immediately above, or into the locks.

The Basin will be made with landings, or coal depots, extending from one thousand to two thousand feet; and the Railroad will pass along those landings, affording the best facilities for placing the

coal from the boats in cars, which may proceed down the west bank of the river, as far as the demands for coal landings may from time to time require. The whole of the west side of the Schuylkill, to the extent of about three miles, will have the means of using the Railroad, when the coal trade shall require such extended accommodations. The elevation of the Railroad above tide water will enable all who wish its use to construct turns-out to their respective coal wharves, or depots; and from these, the cars may deposit the coal on board of vessels for its exportation, or on the wharves, for any and other purposes. The screening of the coal, by permanent screens, may be performed at the same time; an advantage properly appreciated by the minority of the select committee which would be obtained by a Western Canal.

The facilities of loading the coal cars at the basin, obtained from the water being always at the same height, would fully compensate for the expense of the removal from the boats to the cars. The evidence of the value of screening, of the delays consequent to the rise and fall of the tide, is furnished in the Report of the joint committees of Councils. Those delays extend, on an average, to more than two days on every boat. The expenses which attend the keeping of the horses attached to the coal boats; their being always sent into the city, subject to charges much heavier than if they remained on the west side of the river, near the boats; with many difficulties, which often attend the horses being separated from the care of those who own the boats; will all be much diminished by the boats not proceeding beyond the Basin. But a small portion of the coal now shipped from the Schuylkill, is put on board of vessels from the coal boats. The greater part of the coal is first landed on the outer ends of the coal wharves, and from thence is wheeled to the large heaps, which we see accumulated upon each of these depots. When about to be shipped, it is again wheeled to the vessels to receive it. It often undergoes a third removal, for the purposes of screening.

The cost attending the loading the cars from the coal boats in the Basin, where the water will always be at the same height, and transporting it to the coal wharves on the west side of the Schuylkill, depositing it on those wharves by means of turns-out, or at once placing it on board of vessels, and at the same time screening it; will be much less than attends the present operations. The number of labourers required for the work will not be one half, and the coal will always be in better order. In fact no additional expenses in unlading the boats will be incurred, as this will be done

by the "boat hands." In four hours after a boat enters the basin she may be discharged, and on her way up the Schuylkill.*

It is repeated that the proposed Basin and Railroad will afford all the benefits and all the conveniences which have been anticipated from a Western Canal, and all the economy promised from it; with none of the disadvantages and dangers which might attend the locating of a canal along the west side of the river. The Railroad will do no injury to private property, as it is proposed to locate it, with the exception of a few hundred feet, upon a public road; and it will be so constructed, as not in any way to obstruct the uses of the road for general purposes.

A canal would be a great and permanent obstruction to improvements on the west side of the river. It will separate the shores of the Schuylkill from the high grounds; as it could only be crossed by bridges, at all times costly, always inconvenient, and often dangerous. Such bridges would be placed at distances of three and four hundred feet apart, rendering the intermediate spaces difficult of access and inter-communication. Some store houses would be constructed on the sides of the canal, particularly between it and the river, but they would be few. The apprehensions of the effects of a body of water, almost stagnant, and full of the foul deposits which the uses of the canal by the coal boats and other discharges into it would keep afar off, if not altogether prevent the erection of dwellinghouses. The question is not yet settled, and the hazards of the experiment are too serious, whether the introduction of a pool of foul water two miles in length, and sixty feet wide, along the whole of the eastern front of the river, would not destroy the health of the inhabitants of both sides of the Schuylkill. There are those who believe this would be the case; and who believe

* The following is considered a fair estimate of the savings on each boat-load of coal which may be landed in the Basin, and transported on the Railroad to the wharves on the west side of Schuylkill, and there deposited from the cars, or put on board of vessels for exportation.

Two and one-half days saved by unloading in the Basin, instead of in tide water, at \$4 per day,	\$10
Expenses of landing coal saved,	3
Expenses of boy and horses two days and an half, tolls, &c.	2
	<hr/> 15
Deduct charge for Basin and transportation on Railroad,	4
Saving on each boat-load of coal,	<hr/> \$11

that such a canal would depopulate the whole neighbourhood, through or near which it will pass, on both sides of the river.

It is admitted that the opinions of some distinguished medical gentlemen have been expressed, which declare that no injury will be done to the health of those who may reside or be employed near the proposed canal. But while it is not denied that subjects of this kind are properly for the consideration of the medical profession ; it is not allowed that opinions expressed upon *ex parte* statements should have much weight. Assuming that there will be a rapid flow of water through the canal, the apprehended danger from it would be without warrant. Assuming that the water in it would be nearly stagnant and foul, will any one doubt the fatal effects of the malaria it will produce? Will it not be nearly stagnant? The city authorities will restrict the uses of the water in any canal, so as to prevent, effectually, a rapid discharge from it. The Councils of Philadelphia have already spoken with emphasis and decision. The Legislature will not disregard their repeated remonstrances on this subject.

Ought the health of the citizens of West Philadelphia, as well as those who reside on the eastern side of the Schuylkill, in the city, be exposed to any hazard or possibility of injury? Does there exist a necessity for such an exposure; or is it in any manner justifiable to encounter the risk or possibility of such a state of things?

Upon the proximate and final causes of diseases, great differences of opinion exist among physicians of the highest eminence: and when the public may suffer from the errors of a theory, however sustained by names; there is no consolation for such sufferings in the integrity of those by which mistakes these sufferings have been permitted. To him who sees his family dying or dead around him, and who feels that he is himself to be the next victim; who is soon to occupy the same grave with those who have expired before him; it is of little moment whether the wide excavation of the earth for the canal, or the effluvia from its impure water, shall have produced the misery and death which surround them.

If the Schuylkill Permanent bridge shall be made free, and the West Philadelphia Railroad be carried over it into the city, as must and will be, unless prevented by some untoward circumstances; in a very few years the ground on the west side of the Schuylkill opposite to Philadelphia will be covered with dwellinghouses; the residences of those who will be engaged in active business, and of others who may desire to retire from the more crowded streets of

Philadelphia proper. Upon the beautiful slope of the Powelton estate, and on the wide plane extending from below the continuation of Market street, down the Schuylkill, including the property of Dr Hare, Mr Burd and Colonel Powell, the Almshouse estate, and the Woodlands, elegant buildings will be erected, surrounded with gardens ; and wide streets will be laid out, ornamented with all the varieties of our trees. How would all this be deformed, how effectually would all these improvements be checked or prevented by a canal, full of coal boats, on each side of which there would be high heaps of coal deposited and stored up ! Was it necessary that there should be a canal for the prosperous business of the coal trade, these deformities should be submitted to ; and the anticipations of a large and populous city on the west side of the Schuylkill, the beautiful daughter of her more beautiful mother, “beautiful Philadelphia,” should be surrendered. But it has been shown that no such exigency does or can exist. The Basin and Railroad will afford all the facilities, all the conveniences, and be attended with every benefit which the most sanguine friend of the canal can promise.

Along the Railroad, passing rapidly from the upper division of the new city, will be always seen numbers of passenger cars, thus giving the advantages of active movements upon the whole of its eastern front, and furnishing an easy and cheap conveyance for men of business, between the Basin and every place where their interests may call them. What a contrast to these well founded expectations would the obstacles, and obstructions, and diseases of a canal afford !!!

Many other advantages will be derived from the formation of a Basin and Railroad down the west side of the Schuylkill, which will make the plan a profitable one to the stockholders, and highly important to those interested in the coal trade. The Western Railroad or the Basin may be united with the West Philadelphia Railroad : and thus coal may be sent from the Basin by cars loaded from the boats, into the counties of Delaware, Chester and Montgomery, through which the West Philadelphia and the Columbia Railroad, with which it will be connected, passes. This may be done at much less expense than the loading cars from the wharves below Fairmount dam.

It has also been suggested that this Basin and Railroad may be connected with the Philadelphia and Wilmington Railroad, and thus the coal for the supply of all the country through which that valuable improvement will pass, may be conveyed from it.

These views are of the highest importance; and they are submitted for the consideration of those whose interests they may promote.

It is sufficient to add, at this time, that the plan of a Basin above the Fairmount works, and a Railroad along the west side of the river, to a point below the Permanent bridge, has been submitted to the consideration of a most distinguished engineer, and has been approved by him.

Since the publication of the first communication to the public, it has been found that the proposition of THE WESTERN SCHUYLKILL BASIN *and Railroad*, has been received with the strongest evidence of approbation. Encouraged by this sanction of the purpose, plans of the Basin have been suggested, and an accurate survey and estimate of the location of the Railroad, with an estimate of the whole cost of the same have been made by Mr Enoch Lewis, one of the surveyors of the city of Philadelphia; a gentleman of known talents, accuracy and high character. The report of Mr Lewis is subjoined, and his plan of the Basin and location of the Railroad have been lithographed, and is annexed.

A petition to the Legislature to incorporate a company to carry this improvement into execution has been prepared, and is now being circulated for signature. A republication of the first address, with some additions and explanations, seemed to be proper.

RICHARD PETERS.

Philadelphia, January 1835.

REPORT OF MR ENOCH LEWIS.

I herewith offer two plans of a Basin, for the accommodation of coal boats and deposit of coal, without being subjected to the delay and inconvenience of passing the lock out of Fairmount dam.

Plan No. 1, which I prefer, proposes to form an artificial bank, one hundred feet wide, presenting an eastern edge, nearly straight, from a point a little way above the canal mouth to one near the Tow-path bridge. Along this line a towing-path might be formed, and the Railroad might lie by its side. A large opening into the Basin is proposed at the upper extremity, to be crossed by a high bridge, so as to permit boats to pass under it. A second opening is proposed at the lower end, to furnish circulation to the water in the Basin: but as this opening is to be crossed by the Railroad, a

low bridge will be necessary, not admitting the ingress or egress of boats. The quantity of earth required to form this bank must depend upon the depth of water in the dam; estimating that depth at sixteen feet, and the length of the bank at nine hundred feet, we should require nearly eighty thousand yards of earth for its formation. This does not differ very widely from the estimated content of the basin. At all events, the basin could be easily laid out so as to furnish the requisite supply.

As this plan interferes with the privileges of the Schuylkill Navigation Company, it is possible they may object to it, and consequently prevent its adoption.* To obviate this difficulty plan No. 2 is offered.

In this plan the margin of the river is proposed to be left unchanged, except that two openings into the Basin are to be made; the upper one for the passage of boats, and to be crossed on a high bridge; the lower one to be crossed by the Railroad, and a low bridge; the Railroad to lie by the side of the present tow-path; the Basin to insulate the landings, by which arrangement the landings would all be contiguous to the Railroad. Upon this plan the landings would require reduction, but the whole amount of excavation would probably be about fifty thousand yards. In this case some place must be found for depositing this earth. In both plans the western line of the Basin runs very near the Falls road.

The line for the Railroad was commenced at the lower edge of the Basin, and traced along the side of the tow-path, till we approached the new house near the lock; I then passed to the back of that house, cutting off the northwest corner of the yard, and curving to the right crossed the turnpike road a few perches above the tavern, cut off a corner of the garden, and passing back of the tavern and Harding's dwellinghouse, intersected the public road near the first bridge. The line was then continued along the road, until we passed the lime kilns near Chestnut street. South of that point we continued along the bank bordering the marsh, till we entered the land attached to the Almshouse; there we descended to lower ground, but preserved a straight line till we passed the paved road from the Almshouse to the wharf. Near that place we inclined to the right, and keeping near the margin of the fast land, terminated our examination near Mill creek.

* The consent of the Managers of the Schuylkill Navigation Company to the construction of a Basin above Fairmount locks has been applied for, and was yielded with great promptness and liberality.

In assigning a height to the proposed Railroad, I began at the Basin three feet above the surface of the water, or 3.15 below the pier of the canal. In order to pass the turnpike road without injury, I gave, from the margin of the Basin to that road, an ascending grade of twenty feet to the mile, and thus brought the grading of the .94 of a foot, or about the width of a side rail below the present road. Then commencing a descent of sixteen feet to the mile, I continued that until I had High street .95 of a foot below the present road, thus allowing the rails there to be at the same height as the paved road. Having ascertained the ground near Mitchell's new wharf was 1.20 below our High street level, I continued to descend at the same rate, 16 feet per mile, till we attained level, as that appeared a suitable elevation for the road. That level being attained, I computed the remaining part of the line at a perfect level. The lower part of the line, from Mill creek to its junction with the Philadelphia and Wilmington Railroad, was left for future examination.

The whole distance included in the examination is two miles fifty chains. Estimated cost of grading, including two bridges, 9500 dollars. Laying the rails double track 21,000 dollars. Excavating the basin, plan No. 1, 12,000 dollars. Whole cost 42,000 dollars. In this estimation a small allowance only is made for the rock excavation, because the rock appears to be good granite, worth taking out for its value.

By the draft of the road it will be seen that a good line has been obtained. All which is respectfully submitted.

ENOCH LEWIS.

To RICHARD PETERS, Esq.

Philadelphia, 12th month 18, 1835.



